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MARSHALL, GERSTEIN & BORUN LLP
233 S. WACKER DRIVE, SUITE 6300
SEARS TOWER
CHICAGO, IL 60606

EXAMINER	
WINKLER, MELISSA A	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,373	CHAMP ET AL.	
	Examiner	Art Unit	
	MELISSA WINKLER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8,10,12-14 and 20-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8,10,12-14 and 20-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, 7, 13, 14, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO00/52087 to Hähnle et al. in view of US 6,033,769 to Brueggemann et al. For convenience, the citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claims 1 and 4. Hähnle et al. teach a water-absorbing foam, also known as a superabsorbent foam prepared by foaming a polymerizable aqueous mixture (Column 1, Lines 6 – 8 and 11- 14; Column 3, Lines 47 – 48). The aqueous mixture contains monoethylenically unsaturated monomers, designated as group (a) monomers, which have acidic groups which are optionally neutralized (Column 4, Lines 50 – 53). In a particularly preferred embodiment, at least 40 mol% and up to 100 mol% of the group (a) monomers are neutralized (Column 5, Lines 20 – 24). The

aqueous mixture also contains crosslinkers and atleast one surfactant (Column 3, Lines 53 and 55). After foaming, the mixture is polymerized to form an expanded hydrogel (Column 3, Lines 64 – 65).

Hähnle et al. do not teach a synthetic fiber is added to the foam in claimed amount. However, Brueggemann et al. teach a polymeric foam composition in which a filler such as synthetic fiber is added in an amount from 0 to 1,000 weight% relative to the water absorbent polymer in the mixture (Column 4, Lines 38 – 49). Hähnle et al. and Brueggemann et al. are analogous art as they are from the same field of endeavor, namely water-absorbing foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to add fiber to the polymerizable aqueous mixture in the claimed amount. The motivation would have been that this range would provide advantages such as imparting mechanical stability to the foam (Brueggemann et al., Column 4, Lines 35 – 42) without compromising its absorbent properties.

Regarding Claim 5. Hähnle et al. teach the superabsorbent foam of Claim 1 wherein crosslinkers are used. In a preferred embodiment, one crosslinker is soluble in water while the other is insoluble (Column 7, Lines 17 – 19). The soluble crosslinker provides for a uniform crosslinking of the polymer (Column 7, Lines 19 – 23). On the other hand, the insoluble crosslinker concentrates in the surfactant interlayer between the gas phase and the polymerizable aqueous phase, resulting in more extensive

crosslinking on the surface than in the interior of the foam (Column 7, Lines 23 – 30). While Hähnle et al. choose not to employ a cross-linking step subsequent to polymerization, opting to crosslink and polymerize the foam simultaneously for efficiency, such a step has been and may be used (Column 7, Lines 30 – 38).

Regarding Claim 7. Hähnle et al. teach the superabsorbent foam of Claim 1 in which the polymerizable aqueous mixture may contain polyvinylamines or polyethyleneimines (Column 7, Lines 11 – 15).

Regarding Claim 13 and 14. Hähnle et al. teach the superabsorbent foam of Claim 1 can be manufactured as a hygiene article. The hygiene article can be used for such purposes as absorption of body fluids and dressing wounds (Column 19, Lines 7 – 11).

Regarding Claim 25. Hähnle et al. teach the superabsorbent foam of Claim 1 wherein the water content of the foamed mixture is 1 - 60% by weight (Column 3, Lines 64 - 67).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO00/52087 to Hähnle et al. in view of US 6,033,769 to Brueggemann et al., as applied to Claim 1 above, and further in view of US 4,813,945 to Le-Khac. For convenience, the

citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claim 6. Hähnle et al. teach the superabsorbent foam of Claim 1, prepared by foaming a polymerizable aqueous mixture (Column 3, Lines 47 – 48). The aqueous mixture contains monoethylenically unsaturated monomers, designated as group (a) monomers, which contain acidic groups which are optionally neutralized (Column 4, Lines 50 – 53). In a particularly preferred embodiment, at least 40 mol% and up to 100 mol% of the group (a) monomers are neutralized (Column 5, Lines 20 – 24). The monomers may be acrylic acid and are preferably neutralized with sodium or potassium hydroxide solution (Column 4, Lines 50 – 55 and Column 5, Lines 8 – 11).

The aqueous mixture also contains crosslinkers, designated as group (c) monomers, with atleast two ethylenic double bonds (Column 6, Lines 1 - 2). Divinylbenzene and diallyl phthalate are two examples cited as suitable cross linkers that contain at least two unsaturated double bonds (Column 6, Line 16).

The mixture also contains polymerization initiators which decompose to free radicals upon polymerization (Column 8, Lines 20 – 24), as well as one or more surfactants (Column 3, Line 55).

After foaming, the mixture is polymerized to form an expanded hydrogel (Column 3, Lines 64 – 65).

While Hähnle et al. does not teach the superabsorbent foam contains the claimed superabsorbent fiber, Le-Khac teaches a synthetic fiber that can be incorporated into absorbent articles of manufacture to enhance their absorbency (Column 1, Lines 9 – 12; Column 2, Lines 7 – 21). Especially preferred by Le-Khac is a synthetic fiber derived from a copolymer of isobutylene/isobutene and maleic anhydride (Column 4, Lines 57 – 58). After the isobutylene-maleic anhydride copolymer is prepared, it is charged with dimineralized water in a reactor and heated to about 90°C (Column 10, Lines 49 – 52). Sodium hydroxide is subsequently added to mixture and then propylene carbonate, a heterocyclic carbonate (Column 10, Lines 52 – 55). Heterocyclic carbonates are indicated to serve a crosslinking function in the invention (Column 5, Lines 52 – 56). Hänhle et al. and L—Khac are analogous art as they are from the same field of endeavor, namely superabsorbent polymer compositions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a fiber derived from isobutylene-maleic anhydride copolymer in the foam taught by Hähnle et al. The motivation would have been that the isobutylene-maleic anhydride copolymer is cited as the most preferable copolymer for forming the fibers taught by Le-Khac (Column 4, Lines 57 – 58). Furthermore, Le-Khac states that these fibers are well suited for incorporation into articles where absorption is desired, as they provide a large surface

are for contact with the liquid material to be absorbed and are easily confined within the article (Column 6, Lines 35 – 41).

Claims 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO00/52087 to Hähnle et al. in view of US 4,813,945 to Le-Khac and US 6,033,769 to Brueggemann et al. For convenience, the citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claims 8 and 12. Hähnle et al. teach a process for preparing a water-absorbing foam, also known as a superabsorbent foam, by foaming a polymerizable aqueous mixture (Column 1, Lines 6 – 8 and 11- 14; Column 3, Lines 47 – 48). The aqueous mixture contains monoethylenically unsaturated monomers, designated as group (a) monomers, which contain acidic groups which are optionally neutralized (Column 4, Lines 50 – 53). In a particularly preferred embodiment, at least 40 mol% and up to 100 mol% of the group (a) monomers are neutralized (Column 5, Lines 20 – 24). The aqueous mixture also contains crosslinkers and atleast one surfactant (Column 3, Lines 53 and 55). After foaming, the mixture is polymerized to form an expanded hydrogel (Column 3, Lines 64 – 65).

Hähnle et al. do not teach a synthetic fiber is added to the foam in claimed amount. However, Brueggemann et al. teach a polymeric foam composition in which a

filler such as synthetic fiber is added in an amount from 0 to 1,000 weight% relative to the water absorbent polymer in the mixture (Column 4, Lines 38 – 49). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add fiber to the polymerizable aqueous mixture in the claimed amount. The motivation would have been that this range would provide advantages such as imparting mechanical stability to the foam (Brueggemann et al., Column 4, Lines 35 – 42) without compromising its absorbent properties.

Regarding Claim 10. Hähnle et al. teach the process of Claim 8 wherein the foaming occurs as the aqueous polymerizable mixture is first charged under a pressure of 2 – 400 bar with an inert gas and then decompressed to atmospheric pressure (Column 11, Lines 62 – 67 and Column 12, Lines 18 - 19).

Claims 20 – 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO00/52087 to Hähnle et al. in view of US 5,230,959 to Young et al. and US 6,033,769 to Brueggemann et al. For convenience, the citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claims 20, 21 and 23. Hähnle et al. teach a process for preparing a water-absorbing foam, also known as a superabsorbent foam (Column 1, Lines 6 – 8 and 11- 14). Hähnle et al. further disclose the superabsorbent foam is prepared by foaming a

polymerizable aqueous mixture (Column 3, Lines 47 – 48). The aqueous mixture contains monoethylenically unsaturated monomers, designated as group (a) monomers, which contain acidic groups which are optionally neutralized (Column 4, Lines 50 – 53). In a particularly preferred embodiment, at least 40 mol% and up to 100 mol% of the group (a) monomers are neutralized (Column 5, Lines 20 – 24). The monomers may be acrylic acid and are preferably neutralized with sodium or potassium hydroxide solution (Column 4, Lines 50 – 55 and Column 5, Lines 8 – 11).

The aqueous mixture also contains crosslinkers, designated as group (c) monomers, with atleast two ethylenic double bonds (Column 6, Lines 1 - 2). Divinylbenzene and diallyl phthalate are two examples cited as suitable cross linkers that contain at least two unsaturated double bonds (Column 6, Line 16). The mixture also contains polymerization initiators which decompose to free radicals upon polymerization (Column 8, Lines 20 – 24), as well as one or more surfactants (Column 3, Line 55). The aqueous mixture additionally contains atleast one surfactant (Column 3, Lines 53 and 55).

After foaming, the mixture is polymerized to form an expanded hydrogel (Column 3, Lines 64 – 65).

Hänhle et al. do not expressly teach the foam contains one of the claimed natural fibers. However, Young et al. teach natural fibers, such as wheat, can be used to form a

superabsorbent composition (Column 1, Lines 6 – 8 and Column 6, Lines 40 - 58). Hänhle et al. and Young et al. are analogous art as they are from the same field of endeavor, namely superabsorbent compositions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to include wheat fibers taught by Young et al. as a filler in the foam taught by Hänhle et al. The motivation would have been that the addition of the fibers taught by Young et al. would provide advantages such increasing the absorbency and mechanical strength of the foam taught by Hänhle et al.

Hähnle et al. also do not teach a synthetic fiber is added to the foam in claimed amount. However, Brueggemann et al. teach a polymeric foam composition in which a filler such as a natural fiber is added in an amount from 0 to 1,000 weight% relative to the water absorbent polymer in the mixture (Column 4, Lines 38 – 49). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add fiber to the polymerizable aqueous mixture in the claimed amount. The motivation would have been that this range would provide advantages such as imparting mechanical stability to the foam (Brueggemann et al., Column 4, Lines 35 – 42) without compromising its absorbent properties.

Regarding Claim 22. Hähnle et al. teach the superabsorbent foam of Claim 20 wherein crosslinkers are used. In a preferred embodiment, one crosslinker is soluble in

water while the other is insoluble (Column 7, Lines 17 – 19). The soluble crosslinker provides for a uniform crosslinking of the polymer (Column 7, Lines 19 – 23). On the other hand, the insoluble crosslinker concentrates in the surfactant interlayer between the gas phase and the polymerizable aqueous phase, resulting in more extensive crosslinking on the surface than in the interior of the foam (Column 7, Lines 23 – 30). While Hähnle et al. choose not to employ a cross-linking step subsequent to polymerization, opting to crosslink and polymerize the foam simultaneously for efficiency, such a step has been and may be used (Column 7, Lines 30 – 38).

Regarding Claim 24. Hähnle et al. teach the superabsorbent foam of Claim 20 in which the polymerizable aqueous mixture may contain polyvinylamines or polyethyleneimines (Column 7, Lines 11 – 15).

Regarding Claim 26. Hähnle et al. teach the superabsorbent foam of Claim 20 wherein the water content of the foamed mixture is 1 - 60% by weight (Column 3, Lines 64 - 67).

Response to Arguments

Applicant's arguments filed February 8, 2008 have been fully considered but they are not persuasive because:

A) Regarding the applicants' assertion that it would not have been obvious to include superabsorbent fibers in the foam taught by Hänhle et al., the Office recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In *re Nomiya*, 184 USPQ 607 (CCPA 1975). The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). In the instant case, Hänhle et al., Brueggemann et al., and Le-Khac are in the same field of endeavor, as all teach superabsorbent foam/sponge compositions. While Hänhle et al. does not teach the addition of superabsorbent fibers, Brueggemann et al. teach the addition of synthetic fibers can be used to enhance the mechanical stability of superabsorbent foams (Column 4, Lines 35 - 43). Le-Khac also teach that the inclusion of synthetic fibers in a water-absorbing composition provides advantages such as enhancing water and electrolyte solution absorption capacity of the final foam product (Column 1, Line 66 – Column 2, Line 3).

B) Regarding the applicants' assertion that the claimed invention is not obvious because the references do not expressly discuss improvements in wet strength with the addition of superabsorbent fibers, the Office recognizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, Hänhle et al. in view of the supporting references disclose the claimed foam composition. Therefore, the claimed effects and physical properties, i.e. a foam with improved wet strength, would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

C) Regarding the applicants' assertion that the claimed invention is not obvious because the fibers taught by Brueggemann et al. would adversely affect flexibility in the foam, Le-Khac teaches the claimed fiber composition derived from a copolymer of isobutylene/isobutene and maleic anhydride (Column 4, Lines 57 – 58).

Furthermore, though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim

language is broader than the embodiment. *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870,875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004) (MPEP 2111.01) In the instant case, the level of flexibility in the foam has not been claimed.

D) Regarding the applicants' assertion that the claimed invention has unexpected properties as evidenced by the comparison of Inventive Examples 1 – 8 and the Comparative Example 1, the Office acknowledges that Comparative Example 1 is prepared according to the teachings of Hänhle et al. However, an improvement in properties is normally expected when a combination of references is made. Accordingly, the wet strength value provided in Comparative Example 1 cannot be assumed to be the same as the wet strength value of a foam prepared according to the teachings of Hänhle et al. in view of the teachings of Brueggemann et al. and Le-Khac.

E) Regarding the applicants' assertion that the claimed method would not have been obvious in view of the references, it is the Office's position that all claimed elements of the method are taught by the references. The Hänhle et al. reference discloses the claimed method wherein fillers are added before polymerization (Column 3, Lines 45 – 67). While Hänhle et al. does not disclose the filler is the claimed fiber, the Brueggemann et al. and Le-Khac references do disclose claimed fibers and their addition in the claimed amounts. Item A of this section details the rationale for

combing the teachings of these references, as well as motivation for adding fibers to the foam taught by Hänhle et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/
Supervisory Patent Examiner, Art Unit 1796
28-Apr-08

MW
April 22, 2008